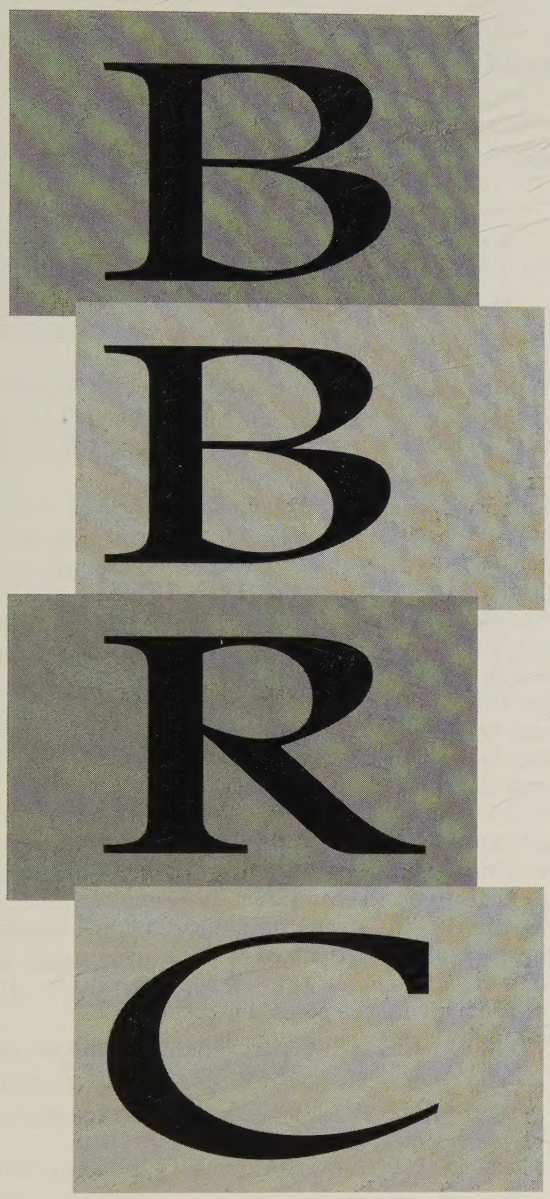


# Biochemical and Biophysical Research Communications

EDITORS
Ernesto Carafoli
I. C. Gunsalus
Akira Ichihara
James D. Jamieson
Yasuo Kagawa
M. Daniel Lane
William J. Lennarz
Masami Muramatsu
Tsuneo Omura
Sten Orrenius
Jacques Pouyssegur
William S. Reznikoff

Volume 264, 1999

ACADEMIC PRESS

Copyright © 1999 by Academic Press

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the Publisher. *Exceptions:* Explicit permission from Academic Press is not required to reproduce a maximum of two figures or tables from an Academic Press article in another scientific or research publication provided that the material has not been credited to another source and that full credit to the Academic Press article is given. In addition, authors of work contained herein need not obtain permission in the following cases only: (1) to use their original figures or tables in their future works; (2) to make copies of their papers for use in their classroom teaching; and (3) to include their papers as part of their dissertations.

The appearance of the code at the bottom of the first page of an article in this journal indicates the Publisher's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (222 Rosewood Drive, Danvers, Massachusetts 01923), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1999 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0006-291X/99 $30.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.

# CONTENTS OF VOLUME 264

## Number 1, October 14, 1999


| | | |
|---|---|---|
| Protection of MLV Vector Particles from Human Complement | **Sabine Breun, Brian Salmons, Walter H. Günzburg, and Jörg G. Baumann** | **1** |
| Real-Time Study of Interactions between a Composite DNA Regulatory Region (HIV-1 LTR NRE) and Several Transcription Factors of Nuclear Extracts | **Laurent Galio, Sylvie Briquet, and Catherine Vaquero** | **6** |
| Presence and Expression of a Novel Variant Form of ST2 Gene Product in Human Leukemic Cell Line UT-7/GM | **Shin-ichi Tominaga, Kenji Kuroiwa, Kenji Tago, Hiroyuki Iwahana, Ken Yanagisawa, and Norio Komatsu** | **14** |
| Bovine Lactoferrin Peptidic Fragments Involved in Inhibition of Herpes Simplex Virus Type 1 Infection | **Rosa Siciliano, Barbara Rega, Magda Marchetti, Lucilla Seganti, Giovanni Antonini, and Piera Valenti** | **19** |
| Cloning, Sequencing, and Characterization of Ribosomal Protein and RNA Polymerase Genes from the Region Analogous to the $\alpha$-Operon of *Escherichia coli* in Halophilic Archaea, *Halobacterium halobium* | **Kazuyoshi Sano, Atsuo Taguchi, Hiromi Furumoto, Taizo Uda, and Takuzi Itoh** | **24** |
| Expression of Cholecystokinin Type A Receptor Gene Correlates with DNA Demethylation during Postnatal Development of Rat Pancreas | **Kimihiko Matsusue, Soichi Takiguchi, Yutaka Takata, Akihiro Funakoshi, Kyoko Miyasaka, and Akira Kono** | **29** |
| Cocaine Potentiates the Switch between Latency and Replication of Epstein–Barr Virus in Raji Cells | **Paolo Di Francesco, Antonella Lisi, Sabrina Rieti, Vanessa Manni, Settimio Grimaldi, and Enrico Garaci** | **33** |
| Unique Characteristics of Ubiquitin-Bonded Complex Play a Pathological Role in Dentatorubral–Pallidoluysian Atrophy | **Ikuru Yazawa** | **37** |
| Attachment of C-Terminus of SDF-1 Enhances the Biological Activity of Its N-Terminal Peptide | **Jiansong Luo, Zhaowen Luo, Naiming Zhou, James W. Hall, and Ziwei Huang** | **42** |
| Association between an $\alpha_2$ Macroglobulin DNA Polymorphism and Late-Onset Alzheimer's Disease | **Victoria Alvarez, Ruth Alvarez, C. H. Lahoz, C. Martínez, J. Peña, L. M. Guisasola, J. Salas-Puig, G. Morís, D. Uría, B. B. Menes, R. Ribacoba, J. A. Vidal, J. M. Sánchez, and Eliecer Coto** | **48** |
| Era, an Essential *Escherichia coli* Small G-Protein, Binds to the 30S Ribosomal Subunit | **Abu Sayed, Shin-ichi Matsuyama, and Masayori Inouye** | **51** |
| BSMAP, a Novel Protein Expressed Specifically in the Brain Whose Gene Is Localized on Chromosome 19p12 | **Greg C. A. Elson, Amelie Benoit de Coignac, Jean-Pierre Aubry, Yves Delneste, Giovanni Magistrelli, James Holzwarth, Jean-Yves Bonnefoy, and Jean-François Gauchat** | **55** |
| Selective Lysis of Virus-Infected Cells by Cobra Snake Cytotoxins: A Sendai Virus, Human Erythrocytes, and Cytotoxin Model | **Gadi Borkow and Michael Ovadia** | **63** |


6 11HI XL 3702 1/00 31249-200

| | | |
|---|---|---|
| Hierarchical Order of Critical Residues on the Immunity-Determining Region of the Im7 Protein Which Confer Specific Immunity to Its Cognate Colicin | **Fong-Ming Lu, Hanna S. Yuan, Ya-Chein Hsu, Ssi-Jean Chang, and Kin-Fu Chak** | **69** |
| An Expanded CTG Trinucleotide Repeat Causes *trans* RNA Interference: A New Hypothesis for the Pathogenesis of Myotonic Dystrophy | **Noboru Sasagawa, Nobuhiro Takahashi, Koichi Suzuki, and Shoichi Ishiura** | **76** |
| A Tetratricopeptide Repeat-Containing Protein Gene, *tpis,* Whose Expression Is Induced with Differentiation of Spermatogenic Cells | **Mikiro Takaishi and Nam-ho Huh** | **81** |
| Molecular Cloning of a Human MafF Homologue, Which Specifically Binds to the Oxytocin Receptor Gene in Term Myometrium | **Tadashi Kimura, Richard Ivell, Werner Rust, Yoshifumi Mizumoto, Kazuhide Ogita, Chika Kusui, Yoko Matsumura, Chihiro Azuma, and Yuji Murata** | **86** |
| Inhibition of Adipogenesis by a COOH-Terminally Truncated Mutant of PPARγ2 in 3T3-L1 Cells | **Jiro Masugi, Yoshikazu Tamori, and Masato Kasuga** | **93** |
| Hemolysate Induces Tyrosine Phosphorylation and Collagen-Lattice Compaction in Cultured Fibroblasts | **Anita Patlolla, Kotaro Ogihara, Kazuya Aoki, Alexander Zubkov, Eva Bengten, Andrew D. Parent, and John H. Zhang** | **100** |
| Farnesyl Pyrophosphate Synthase Is the Molecular Target of Nitrogen-Containing Bisphosphonates | **Ermond van Beek, Elsbet Pieterman, Louis Cohen, Clemens Löwik, and Socrates Papapoulos** | **108** |
| Molecular Cloning of the Gene for p85 That Regulates the Initiation of Cytokinesis in *Tetrahymena* | **Kohsuke Gonda, Kimiko Nishibori, Hiroyoshi Ohba, Atsushi Watanabe, and Osamu Numata** | **112** |
| Human Chromosomal Localization, Tissue/Tumor Expression, and Regulatory Function of the *ets* Family Gene *EHF* | **Laurie A. Kleinbaum, Catherine Duggan, Elisabeth Ferreira, Greg P. Coffey, Giovanna Butticè, and Frank H. Burton** | **119** |
| The β4 Integrin Subunit Rescues A431 Cells from Apoptosis through a PI3K/Akt Kinase Signaling Pathway | **Keqin Tang, Daotai Nie, Yinlong Cai, and Kenneth V. Honn** | **127** |
| *In Vitro* Effects of Angiopoietins and VEGF on Hematopoietic and Endothelial Cells | **Xu-Ling Huang, Nobuyuki Takakura, and Toshio Suda** | **133** |
| The Cell Death Regulatory Protein Bak Is Expressed in Endothelial Cells in Inflamed Tissues and Is Induced by IFN-γ *in Vitro* | **J. Pammer, W. Weninger, J. Ban, J. Wojta, and E. Tschachler** | **139** |
| CRM1 Mediates Nuclear Export of Nonstructural Protein 2 from Parvovirus Minute Virus of Mice | **Takayuki Ohshima, Toshihiro Nakajima, Takayuki Oishi, Naoko Imamoto, Yoshihiro Yoneda, Akiyoshi Fukamizu, and Ken-ichi Yagami** | **144** |
| Molecular Cloning of a Novel *Xenopus spalt* Gene (*Xsal-3*) | **Yasuko Onuma, Ryuichi Nishinakamura, Shuji Takahashi, Takashi Yokota, and Makoto Asashima** | **151** |
| Identification of Aquaporin 5 (AQP5) within the Cochlea: cDNA Cloning and *in Situ* Localization | **Anand N. Mhatre, Silke Steinbach, Kambridge Hribar, A. T. M. Shamsul Hoque, and Anil K. Lalwani** | **157** |

| | | |
|---|---|---|
| Novel Association of the Src Family Kinases, Hck and c-Fgr, with CCR3 Receptor Stimulation: A Possible Mechanism for Eotaxin-Induced Human Eosinophil Chemotaxis | **Amr El-Shazly, Naoto Yamaguchi, Keisuke Masuyama, Toshio Suda, and Takeru Ishikawa** | **163** |
| Phenylalanine 138 in the Second Intracellular Loop of Human Thromboxane Receptor Is Critical for Receptor-G-Protein Coupling | **Huiping Zhou, Fengxiang Yan, Shuichi Yamamoto, and Hsin-Hsiung Tai** | **171** |
| Study of DFF45 in Its Role of Chaperone and Inhibitor: Two Independent Inhibitory Domains of DFF40 Nuclease Activity | **John S. McCarty, Shen Yon Toh, and Peng Li** | **176** |
| Multiple Domains of DFF45 Bind Synergistically to DFF40: Roles of Caspase Cleavage and Sequestration of Activator Domain of DFF40 | **John S. McCarty, Shen Yon Toh, and Peng Li** | **181** |
| Regulated Expression of the *nifM* of *Azotobacter vinelandii* in Response to Molybdenum and Vanadium Supplements in Burk's Nitrogen-Free Growth Medium | **Shi Lei, Lakshmidevi Pulakat, and Narasaiah Gavini** | **186** |
| Identification of Two Penicillin-Binding Multienzyme Complexes in *Haemophilus influenzae* | **Armin Alaedini and Richard A. Day** | **191** |
| Evidence That Histidine-163 Is Critical for Catalytic Activity, but Not for Substrate Binding to *Escherichia coli* Agmatinase | **Nelson Carvajal, Juan Olate, Mónica Salas, Vasthi López, Juan Cerpa, Paula Herrera, and Elena Uribe** | **196** |
| Characterization of Recombinant Fungal Phytase (*phyA*) Expressed in Tobacco Leaves | **Abul H. J. Ullah, Kandan Sethumadhavan, Edward J. Mullaney, Thomas Ziegelhoffer, and Sandra Austin-Phillips** | **201** |
| Conversion of Lysine to $N^{\epsilon}$-(Carboxymethyl)lysine Increases Susceptibility of Proteins to Metal-Catalyzed Oxidation | **Jesús R. Requena and Earl R. Stadtman** | **207** |
| EPR Detection of Reactive Oxygen Species in Hemolymph of *Galleria mellonella* and *Dendrolimus superans sibiricus* (Lepidoptera) Larvae | **I. A. Slepneva, V. V. Glupov, S. V. Sergeeva, and V. V. Khramtsov** | **212** |
| A Key Driving Force in Determination of Protein Structural Classes | **Kuo-Chen Chou** | **216** |
| Fragments from $\alpha$-Actinin Insert into Reconstituted Lipid Bilayers | **Wolfgang H. Goldmann, Jens M. Teodoridis, C. Pal Sharma, Jose Luis Alonso, and Gerhard Isenberg** | **225** |
| Estradiol-17$\beta$ Stimulates the Renewal of Spermatogonial Stem Cells in Males | **Takeshi Miura, Chiemi Miura, Takashi Ohta, Manal R. Nader, Takashi Todo, and Kohei Yamauchi** | **230** |
| Molecular Cloning of Chick UCH-6 Which Shares High Similarity with Human UCH-L3: Its Unusual Substrate Specificity and Tissue Distribution | **Sung Hee Baek, Yung Joon Yoo, Keiji Tanaka, and Chin Ha Chung** | **235** |

| | | |
|---|---|---|
| Serine Phosphorylation of the Sarcoplasmic Reticulum $Ca^{2+}$-ATPase in the Intact Beating Rabbit Heart | **Ande Xu, Thomas Netticadan, Douglas L. Jones, and Njanoor Narayanan** | **241** |
| Proline-Rich Synapse-Associated Proteins ProSAP1 and ProSAP2 Interact with Synaptic Proteins of the SAPAP/GKAP Family | **Tobias M. Boeckers, Carsten Winter, Karl-Heinz Smalla, Michael R. Kreutz, Juergen Bockmann, Constanze Seidenbecher, Craig C. Garner, and Eckart D. Gundelfinger** | **247** |
| Enhancement of Dendrimer-Mediated Transfection Using Synthetic Lung Surfactant Exosurf Neonatal *in Vitro* | **Jolanta F. Kukowska-Latallo, Chunling Chen, Jon Eichman, Anna U. Bielinska, and James R. Baker, Jr.** | **253** |
| Formation of Oxygen Radicals in Solutions of 7,8-Dihydroneopterin | **Karl Oettl, Barbara Wirleitner, Gabriele Baier-Bitterlich, Tanja Grammer, Dietmar Fuchs, and Gilbert Reibnegger** | **262** |
| Interaction of Measles Virus (Hallé Strain) with CD46: Evidence That a Common Binding Site on CD46 Facilitates Both CD46 Downregulation and MV Infection | **Valérie Lecouturier, Alexandra Rizzitelli, Joël Fayolle, Laurent Daviet, Fabian T. Wild, and Robin Buckland** | **268** |
| Stimulation of Macrophages by Mucins through a Macrophage Scavenger Receptor | **Mizue Inoue, Hironori Fujii, Hiromi Kaseyama, Ikuo Yamashina, and Hiroshi Nakada** | **276** |
| Effects of Tryptophan Residues of Porcine Myeloid Antibacterial Peptide PMAP-23 on Antibiotic Activity | **Joo Hyun Kang, Song Yub Shin, So Yun Jang, Kil Lyong Kim, and Kyung-Soo Hahm** | **281** |
| Residues within the HFRIGC Sequence of HIV-1 Vpr Involved in Growth Arrest Activities | **Janette M. Berglez, Laura A. Castelli, Sonia A. Sankovich, Stuart C. Smith, Cyril C. Curtain, and Ian G. Macreadie** | **287** |
| Cloning and Immunolocalization of a Rat Pancreatic $Na^+$ Bicarbonate Cotransporter | **Frank Thévenod, Eleni Roussa, Bernhard M. Schmitt, and Michael F. Romero** | **291** |
| Identification and cDNA Cloning of *headpin,* a Novel Differentially Expressed Serpin That Maps to Chromosome 18q | **Paul Spring, Torahiko Nakashima, Mitchell Frederick, Ying Henderson, and Gary Clayman** | **299** |
| The N-Terminal Half of NPM Dissociates from Nucleoli of HeLa Cells after Anticancer Drug Treatments | **Pui K. Chan, David A. Bloom, and Thomas T. Hoang** | **305** |


**Number 2, October 22, 1999**


| | | |
|---|---|---|
| PPAR$\alpha$ Activation by Wy 14643 Induces Transactivation of the Rat UCP-1 Promoter without Increasing UCP-1 mRNA Levels and Attenuates PPAR$\gamma$-Mediated Increases in UCP-1 mRNA Levels Induced by Rosiglitazone in Fetal Rat Brown Adipocytes | **Teresa Teruel, John C. Clapham, and Stephen A. Smith** | **311** |
| Identification of Two Serine Residues Involved in Catalysis by Fatty Acid Amide Hydrolase | **Romelda L. Omeir, Gladys Arreaza, and Dale G. Deutsch** | **316** |

| | | |
|---|---|---|
| Immunosuppressive Effect of Leukotriene $B_4$ Receptor Antagonist *in Vitro* | **Hiroaki Morita, Kazuyoshi Takeda, Hideo Yagita, and Ko Okumura** | **321** |
| Intramolecular Quadruplex Formation of the G-Rich Strand of the Mouse Hypervariable Minisatellite Pc-1 | **Masato Katahira, Hirokazu Fukuda, Hiroshi Kawasumi, Takashi Sugimura, Hitoshi Nakagama, and Minako Nagao** | **327** |
| A Novel DIDS-Sensitive, Anion-Dependent $Mg^{2+}$ Efflux Pathway in Rat Ventricular Myocytes | **Maria P. Ödblom and Richard D. Handy** | **334** |
| Characterization of Multiple Nuclear Localization Signals in Herpes Simplex Virus Type 1 Thymidine Kinase | **Bart Degrève, Robert Esnouf, Erik De Clercq, and Jan Balzarini** | **338** |
| Loss of Molecular Interaction between Cytochrome *c* and Cardiolipin Due to Lipid Peroxidation | **Yoshihiro Shidoji, Katsuhiro Hayashi, Sadaaki Komura, Nobuko Ohishi, and Kunio Yagi** | **343** |
| Cell Wall-Affecting Antibiotics Induce Expression of a Novel Gene, *drp35,* in *Staphylococcus aureus* | **Hiroyuki Murakami, Hiroyuki Matsumaru, Mutsumi Kanamori, Hideo Hayashi, and Toshiko Ohta** | **348** |
| Proteasome Inhibitors Lactacystin and MG132 Inhibit the Dephosphorylation of HSF1 after Heat Shock and Suppress Thermal Induction of Heat Shock Gene Expression | **Dooha Kim and Gloria C. Li** | **352** |
| p53 Down-Regulates ER-Responsive Genes by Interfering with the Binding of ER to ERE | **G. Liu, J. A. Schwartz, and S. C. Brooks** | **359** |
| A Novel Compound Heterozygote (FAP ATTR Arg104His/ATTR Val30Met) with High Serum Transthyretin (TTR) and Retinol Binding Protein (RBP) Levels | **H. Terazaki, Y. Ando, S. Misumi, M. Nakamura, E. Ando, N. Matsunaga, S. Shoji, M. Okuyama, H. Ideta, K. Nakagawa, T. Ishizaki, M. Ando, and M. J. M. Saraiva** | **365** |
| Contribution of Mitogen-Activated Protein Kinase to Stimulation of Phospholipase D by the Chemotactic Peptide fMet-Leu-Phe in Human Neutrophils | **Bahia Djerdjouri, Monique Lenoir, Jean-Paul Giroud, and Axel Périanin** | **371** |
| 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin-Mediated Oxidative Stress in CYP1A2 Knockout (CYP1A2−/−) Mice | **Brian P. Slezak, Janet J. Diliberto, and Linda S. Birnbaum** | **376** |
| Cytochrome *c*-553 from the Alkalophilic Bacterium *Bacillus pasteurii* Has the Primary Structure Characteristics of a Lipoprotein | **Isabel H. M. Vandenberghe, Yves Guisez, Stefano Ciurli, Stefano Benini, and Jozef J. Van Beeumen** | **380** |
| Single-Strand Breaks in Agarose-Embedded Chromatin of Nonapoptotic Cells | **Tamás Varga, Ildikó Szilágyi, and Gábor Szabó, Jr.** | **388** |
| An Upstream Repressor Element That Contributes to Hepatocyte-Specific Expression of the Rat Serum Amyloid A1 Gene | **Lei Li and Warren S.-L. Liao** | **395** |
| Characterization of the *MEN1* Ortholog in Zebrafish | **Shideh Khodaei, Kevin P. O'Brien, Jan Dumanski, Fung Ki Wong, and Günther Weber** | **404** |

| | | |
|---|---|---|
| Rapamycin Inhibits Activation of Ryanodine Receptors from Skeletal Muscle by the Fatty Acyl CoA–Acyl CoA Binding Protein Complex | **Rosella Fulceri, Roberta Giunti, Jens Knudsen, Rosanna Leuzzi, Tamas Kardon, and Angelo Benedetti** | **409** |
| Cloning of a Novel Cytochrome P450 (CYP4C15) Differentially Expressed in the Steroidogenic Glands of an Arthropod | **Chantal Dauphin-Villemant, Detlef Böcking, Moshe Tom, Martine Maïbèche, and René Lafont** | **413** |
| Characterization and cDNA Cloning of Androgenic Gland Hormone of the Terrestrial Isopod *Armadillidium vulgare* | **Atsuro Okuno, Yuriko Hasegawa, Tsuyoshi Ohira, Yasutosi Katakura, and Hiromichi Nagasawa** | **419** |
| Human Serum Immunoglobulin G3 Subclass Bound Preferentially to Asialo-, Agalactoimmunoglobulin A1/Sepharose | **Hitoo Iwase, Yuhichiro Yokozeki, Yoshiyuki Hiki, Atsushi Tanaka, Tohru Kokubo, Takashi Sano, Ikuko Ishii-Karakasa, Kunio Hisatani, Yutaka Kobayashi, and Kyoko Hotta** | **424** |
| Identification of Autoantibodies Associated with Rippling Muscles and Myasthenia Gravis That Recognize Skeletal Muscle Proteins: Possible Relationship of Antigens and Stretch-Activated Ion Channels | **Gary R. Walker, Thomas Watkins, and Carl F. Ansevin** | **430** |
| Hypoxic Stress Induces Cardiotrophin-1 Expression in Cardiac Myocytes | **Shigemichi Hishinuma, Masanobu Funamoto, Yasushi Fujio, Keita Kunisada, and Keiko Yamauchi-Takihara** | **436** |
| Advanced Glycation End Product-Induced Peroxisome Proliferator-Activated Receptor $\gamma$ Gene Expression in the Cultured Mesangial Cells | **Yasunori Iwashima, Masaaki Eto, Seikoh Horiuchi, and Hiroaki Sano** | **441** |
| Activity and Substrate Specificity of the Murine STK2 Serine/Threonine Kinase That Is Structurally Related to the Mitotic Regulator Protein NIMA of *Aspergillus nidulans* | **Kouji Hayashi, Hideya Igarashi, Michio Ogawa, and Nobuo Sakaguchi** | **449** |
| Cloning and Characterization of a Novel $p21^{Cip1/Waf1}$-Interacting Zinc Finger Protein, Ciz1 | **Kaoru Mitsui, Akira Matsumoto, Satoshi Ohtsuka, Motoaki Ohtsubo, and Akihiko Yoshimura** | **457** |
| Reconstituted HDL Containing Human Apolipoprotein A-1 Reduces VCAM-1 Expression and Neointima Formation Following Periadventitial Cuff-Induced Carotid Injury in apoE Null Mice | **Paul Dimayuga, Jenny Zhu, Sumito Oguchi, Kuang-Yuh Chyu, Xiao-Ou Helen Xu, Juliana Yano, P. K. Shah, Jan Nilsson, and Bojan Cercek** | **465** |
| The Tumor-Suppressing Activity of Angiostatin Protein Resides within Kringles 1 to 3 | **Nicholas J. MacDonald, Amy Chang Murad, William E. Fogler, Yingyu Lu, and B. K. L. Sim** | **469** |
| The Importance of the Putative Helices 4 and 5 of Human Vitamin $D_3$ Receptor for Conformation and Ligand Binding | **Sami Väisänen, Carole Duchier, Juha Rouvinen, and Pekka H. Mäenpää** | **478** |
| Identification of Two Novel Mutations in the Hypoglycemic Phenotype of Very Long Chain Acyl-CoA Dehydrogenase Deficiency | **Guocheng He, Bing-Zhi Yang, Diane S. Roe, Roy Teramoto, Kirk Aleck, Theresa A. Grebe, Charles R. Roe, and Jia-Huan Ding** | **483** |

| | | |
|---|---|---|
| Decreased Contraction of Glycated Collagen Lattices Coincides with Impaired Matrix Metalloproteinase Production | **Laure Rittié, Alix Berton, Jean-Claude Monboisse, William Hornebeck, and Philippe Gillery** | **488** |
| Photoaffinity Labeling of the Herpes Simplex Virus Type-1 Single-Strand DNA-Binding Protein (ICP8) with Oligodeoxyribonucleotides | **Eric J. White and Paul E. Boehmer** | **493** |
| Biophysical Characterization of Betabellin 16D: A $\beta$-Sandwich Protein That Forms Narrow Fibrils Which Associate into Broad Ribbons | **Amareth Lim, Alexander M. Makhov, Matthew J. Saderholm, Jack D. Griffith, and Bruce W. Erickson** | **498** |
| Trypsinogen Stabilization by Mutation Arg117→His: A Unifying Pathomechanism for Hereditary Pancreatitis? | **Miklós Sahin-Tóth, László Gráf, and Miklós Tóth** | **505** |
| Increased Susceptibility to Apoptosis of Human Hepatocarcinoma Cells Transfected with Antisense *N*-Acetylglucosaminyltransferase V cDNA | **Hua-Bei Guo, Fei Liu, and Hui-Li Chen** | **509** |
| Chromosomal Instability of Fanconi Anemia Cells Is Not the Consequence of a Defective Repair Activity of the Ribosomal Protein S3 | **Maria Helena Ramirez, Werner Ruppitsch, Monica Hirsch-Kauffmann, and Manfred Schweiger** | **518** |
| Overproduction of the Outer-Membrane Proteins FepA and FhuE Responsible for Iron Transport in *Escherichia coli hfq::cat* Mutant | **Masaaki Wachi, Ayako Takada, and Kazuo Nagai** | **525** |
| Phosphorylation/Dephosphorylation Steps Are Crucial for the Induction of CYP2B1 and CYP2B2 Gene Expression by Phenobarbital | **Akino Kawamura, Yukiko Yoshida, Noriko Kimura, Hiroaki Oda, and Atsushi Kakinuma** | **530** |
| *In Vitro* Transcriptional and Translational Block of the bcl-2 Gene Operated by Peptide Nucleic Acid | **Luca Mologni, Peter E. Nielsen, and Carlo Gambacorti-Passerini** | **537** |
| $N^2$-(1-Carboxyethyl)deoxyguanosine, a Nonenzymatic Glycation Adduct of DNA, Induces Single-Strand Breaks and Increases Mutation Frequencies | **Monika Pischetsrieder, Wolfgang Seidel, Gerald Münch, and Reinhard Schinzel** | **544** |
| Akt Phosphorylation Site Found in Human Caspase-9 Is Absent in Mouse Caspase-9 | **Eriko Fujita, Atsushi Jinbo, Hidenori Matuzaki, Hiroaki Konishi, Ushio Kikkawa, and Takashi Momoi** | **550** |
| A Novel Mutant of Green Fluorescent Protein with Enhanced Sensitivity for Microanalysis at 488 nm Excitation | **Yoichiro Ito, Miho Suzuki, and Yuzuru Husimi** | **556** |
| Nuclear Factor $\kappa$B Activity Is Essential for Matrix Metalloproteinase-1 and -3 Upregulation in Rabbit Dermal Fibroblasts | **Mark Bond, Andrew H. Baker, and Andrew C. Newby** | **561** |
| Molecular Cloning of Macrophin, a Human Homologue of *Drosophila* Kakapo with a Close Structural Similarity to Plectin and Dystrophin | **Takahito Okuda, Satoru Matsuda, Shigekazu Nakatsugawa, Yasukatu Ichigotani, Naoko Iwahashi, Masahide Takahashi, Takeo Ishigaki, and Michinari Hamaguchi** | **568** |

| | | |
|---|---|---|
| Secretory IgA-Mediated Basophil Activation. II. Roles of GTP-Binding Regulatory Proteins and Phosphatidylinositol 3-Kinase | **Motoyasu Iikura, Masao Yamaguchi, Misato Miyamasu, Yutaka Morita, Takashi Iwase, Itaru Moro, Kazuhiko Yamamoto, and Koichi Hirai** | **575** |
| Vitellogenin-6 Is a Major Carbonylated Protein in Aged Nematode, *Caenorhabditis elegans* | **Akihiro Nakamura, Kayo Yasuda, Hirosi Adachi, Yoshihiko Sakurai, Naoaki Ishii, and Sataro Goto** | **580** |
| The Expression of *Escherichia coli* SOS Genes *recA* and *uvrA* Is Inducible by Polyamines | **Tae Jeong Oh and In Gyu Kim** | **584** |
| 1,25-Dihydroxyvitamin $D_3$ and Prostaglandin $E_2$ Act Directly on Circulating Human Osteoclast Precursors | **Ichiro Itonaga, Afsie Sabokbar, Susan D. Neale, and Nicholas A. Athanasou** | **590** |
| Recovery of Catalytic Activity from an Inactive Aggregated Mutant of L-Aspartase | **Maithri M. K. Jayasekera and Ronald E. Viola** | **596** |
| Protection by Protein A of Apoptotic Cell Death Caused by Anti-AIDS Drug Zidovudine | **Amiya Kumar Ghosh, Srikanta Jana, Tanya Das, Gaurisankar Sa, Nripendranath Mandal, and Prasanta Kumar Ray** | **601** |
| Combined Enhancement of Microtubule Assembly and Glucose Metabolism in Neuronal Systems *in Vitro:* Decreased Sensitivity to Copper Toxicity | **Károly Liliom, Gábor Wágner, János Kovács, Begoña Comin, Marta Cascante, Ferenc Orosz, and Judit Ovádi** | **605** |


**Number 3, November 2, 1999**

**BREAKTHROUGHS AND VIEWS**


| | | |
|---|---|---|
| Masking and Reduction of the Galactose-α1,3-Galactose (α-Gal) Epitope, the Major Xenoantigen in Swine, by the Glycosyltransferase Gene Transfection | **Shuji Miyagawa, Masahiro Tanemura, Souichi Koyota, Masaru Koma, Yoshitaka Ikeda, Ryota Shirakura, and Naoyuki Taniguchi** | **611** |


**REGULAR ARTICLES**


| | | |
|---|---|---|
| Expression of the Calcium-Sensing Receptor in Pancreatic Islet B-Cells | **Joanne Rasschaert and Willy J. Malaisse** | **615** |
| Overexpression of the α2,6-Sialyltransferase, ST6Gal I, in a Low Metastatic Variant of a Murine Lymphoblastoid Cell Line Is Associated with Appearance of a Unique ST6Gal I mRNA | **Neng-Wen Lo, James W. Dennis, and Joseph T. Y. Lau** | **619** |
| The Antioxidant 4b,5,9b,10-Tetrahydroindeno[1,2-*b*]indole Inhibits Apoptosis by Preventing Caspase Activation Following Mitochondrial Depolarization | **G. P. Devitt, E. M. Creagh, and T. G. Cotter** | **622** |
| Characteristics of Fibrinogen Binding to the Domain of CD11c, an α Subunit of p150,95 | **Sang-Uk Nham** | **630** |
| Structural Characterization of a Highly Stable Cysteine Protease Ervatamin C | **Suman Kundu, Monica Sundd, and Medicherla V. Jagannadham** | **635** |

| | | |
|---|---|---|
| Involvement of ppGpp, Ribosome Modulation Factor, and Stationary Phase-Specific Sigma Factor $\sigma^S$ in the Decrease in Cell Viability Caused by Spermidine | **Auayporn Apirakaramwong, Keiko Kashiwagi, V. Samuel Raj, Kaori Sakata, Yoshimi Kakinuma, Akira Ishihama, and Kazuei Igarashi** | **643** |
| Profound and Selective Loss of Catalytic TrkB Immunoreactivity in Alzheimer's Disease | **Shelley J. Allen, Gordon K. Wilcock, and David Dawbarn** | **648** |
| Insulin-like Growth Factor Binding Proteins in Cerebrospinal Fluid during Human Development and Aging | **Paul M. Arnold, Jianxin Y. Ma, Bruce A. Citron, and Barry W. Festoff** | **652** |
| Effect of Faradic Products on Direct Current-Stimulated Calvarial Organ Culture Calcium Levels | **T. Bodamyali, J. M. Kanczler, B. Simon, D. R. Blake, and C. R. Stevens** | **657** |
| Genomic Organization and Genetic Mapping of the Bovine PREF-1 Gene | **Scott C. Fahrenkrug, Brad A. Freking, and Timothy P. L. Smith** | **662** |
| Involvement of the Sp1 Site in *ras*-Mediated Downregulation of the *RECK* Metastasis Suppressor Gene | **Regina M. Sasahara, Chiaki Takahashi, and Makoto Noda** | **668** |
| p38MAP Kinase Is a Negative Regulator for ERK1/2-Mediated Growth of AIDS-Associated Kaposi's Sarcoma Cells | **Kaoru Murakami-Mori, Shunsuke Mori, and Shuji Nakamura** | **676** |
| Non-methylene-Interrupted Polyunsaturated Fatty Acids: Effective Substitute for Arachidonate of Phosphatidylinositol | **Tamotsu Tanaka, Tatsunori Takimoto, Jun-ichi Morishige, Yasushi Kikuta, Takayuki Sugiura, and Kiyoshi Satouchi** | **683** |
| Unusual Phosphatase Activity Resistant to SDS and Pronase Treatments in *Xenopus* Ovary | **Toshihiko Sugimoto, Moriyoshi Amano, Toshinobu Tokumoto, and Katsutoshi Ishikawa** | **689** |
| Dual Potential of Extracellular Signal-Regulated Kinase for the Control of Cell Survival | **Yoshihisa Ishikawa and Masanori Kitamura** | **696** |
| Lack of Dependence on p53 for DNA Double Strand Break Repair of Episomal Vectors in Human Lymphoblasts | **Manu Kohli and Timothy J. Jorgensen** | **702** |
| Screening of Transcriptionally Regulated Genes Following Iron Chelation in Human Astrocytoma Cells | **Zheng Ye and James R. Connor** | **709** |
| Isolation of a New Ribonuclease from Fresh Fruiting Bodies of the Straw Mushroom | **Hexiang Wang and Tze Bun Ng** | **714** |
| Synergistic Effect of PTH on the Mechanical Responses of Human Alveolar Osteocytes | **Hideki Sekiya, Yuko Mikuni-Takagaki, Toshiroh Kondoh, and Kan-ichi Seto** | **719** |
| Bad Overexpression Sensitizes NIH/3T3 Cells to Undergo Apoptosis Which Involves Caspase Activation and ERK Inactivation | **Ming-Shiou Jan, Hsiao-Sheng Liu, and Yee-Shin Lin** | **724** |
| The Fourth Immunoglobulin-like Loop in the Extracellular Domain of FLT-1, a VEGF Receptor, Includes a Major Heparin-Binding Site | **Mikyoung Park and Seung-Taek Lee** | **730** |
| Transcriptional Induction of Metallothionein-I and -II Genes in the Livers of Cu,Zn-Superoxide Dismutase Knockout Mice | **Kalpana Ghoshal, Sarmila Majumder, Zhiling Li, Tamy M. Bray, and Samson T. Jacob** | **735** |

| | | |
|---|---|---|
| Sphingosine 1-Phosphate Induces Angiogenesis: Its Angiogenic Action and Signaling Mechanism in Human Umbilical Vein Endothelial Cells | **Ok-Hee Lee, Young-Mi Kim, You Mie Lee, Eun-Joung Moon, Doo-Jae Lee, Jae-Hong Kim, Kyu-Won Kim, and Young-Guen Kwon** | **743** |
| High Expression of Macrophage Migration Inhibitory Factor in Human Melanoma Cells and Its Role in Tumor Cell Growth and Angiogenesis | **Tadamichi Shimizu, Riichiro Abe, Hideki Nakamura, Akira Ohkawara, Masaki Suzuki, and Jun Nishihira** | **751** |
| Orexins, Orexigenic Hypothalamic Neuropeptides, Suppress the Pulsatile Secretion of Luteinizing Hormone in Ovariectomized Female Rats | **Takao Tamura, Minoru Irahara, Michiko Tezuka, Machiko Kiyokawa, and Toshihiro Aono** | **759** |
| Bioconjugation of Laminin-Related Peptide YIGSR with Polyvinyl Pyrrolidone Increases Its Antimetastatic Effect Due to a Longer Plasma Half-Life | **Yu Mu, Haruhiko Kamada, Hiroshi Kodaira, Keiko Sato, Yasuo Tsutsumi, Mistuko Maeda, Koichi Kawasaki, Motoyoshi Nomizu, Yoshihiko Yamada, and Tadanori Mayumi** | **763** |
| Selective Expression and Function of Granzyme D in Lymphohematopoietic Stromal Cells | **Akiko Yokoi, Tatsuo Kina, and Nagahiro Minato** | **768** |
| Alteration of the Increase in Intracellular [$Ca^{2+}$] in Proliferating Smooth Muscle Cells | **Tomoyasu Sugiyama, Kazuhide Hasegawa, Nobuaki Yanai, Katsuhiko Mikoshiba, Masuo Obinata, and Yuzuru Matsuda** | **774** |
| VAMP-1 Has a Highly Variable C-Terminus Generated by Alternative Splicing | **Lars Berglund, Hans Jürgen Hoffmann, Ronald Dahl, and Torben Ellebæk Petersen** | **777** |
| Marked Induction of the IAP Family Antiapoptotic Proteins Survivin and XIAP by VEGF in Vascular Endothelial Cells | **Jennifer Tran, Janusz Rak, Capucine Sheehan, Samuel D. Saibil, Eric LaCasse, Robert G. Korneluk, and Robert S. Kerbel** | **781** |
| Identification and Gene Structure of a Novel Human PLZF-Related Transcription Factor Gene, TZFP | **Wen-chang Lin, Chun-Hung Lai, Chieh-Ju C. Tang, Chang-Jen Huang, and Tang K. Tang** | **789** |
| Energy Deficits Suppress Both Systemic and Gut Immunity during Infection | **Kristine G. Koski, Zhong Su, and Marilyn E. Scott** | **796** |
| DNA Sequences Responsible for Reduced Promoter Activity of Human Phospholipid Transfer Protein by Fibrate | **An-Yue Tu and John J. Albers** | **802** |
| Heparin Binding Epidermal Growth Factor-like Growth Factor Is a Transforming Growth Factor $\beta$-Regulated Gene in Intestinal Epithelial Cells | **Nada Bulus and John A. Barnard** | **808** |
| Tumor Necrosis Factor-$\alpha$ and Interferon-$\gamma$ Induce Expression of Functional Fas Ligand on HT29 and MCF7 Adenocarcinoma Cells | **Cord Naujokat, Orhan Sezer, and Kurt Possinger** | **813** |
| Construction and Characterization of Mutant Water-Soluble PQQ Glucose Dehydrogenases with Altered $K_m$ Values—Site-Directed Mutagenesis Studies on the Putative Active Site | **Satoshi Igarashi, Takafumi Ohtera, Hiromi Yoshida, Arief Budi Witarto, and Koji Sode** | **820** |
| Molecular Modeling of Human Procathepsin E: Analysis of Salt-Bridge Interactions between Propeptide and Enzyme Segment | **M. Kamran Azim and Zafar H. Zaidi** | **825** |

| | | |
|---|---|---|
| Identification of Three New Alternate Human Kallikrein 2 Transcripts: Evidence of Long Transcript and Alternative Splicing | **Xiu Fen Liu, Magnus Essand, George Vasmatzis, Byungkook Lee, and Ira Pastan** | **833** |
| Opposing Effects of Protein Kinase C $\delta$ and Protein Kinase B $\alpha$ on $H_2O_2$-Induced Apoptosis in CHO Cells | **Hiroaki Konishi, Hidenori Matsuzaki, Hiroshi Takaishi, Toshiyoshi Yamamoto, Mizuho Fukunaga, Yoshitaka Ono, and Ushio Kikkawa** | **840** |
| A Human IAP-Family Gene, *Apollon,* Expressed in Human Brain Cancer Cells | **Zhihong Chen, Mikihiko Naito, Satoko Hori, Tetsuo Mashima, Takao Yamori, and Takashi Tsuruo** | **847** |
| Metabolism of D-Glucose and Its Pentaacetate Ester in Muscles and Pancreatic Islets of GLUT4 Null Mice | **L. Ladrière, M. J. Charron, and W. J. Malaisse** | **855** |
| Activation of p53 in MDM2-Overexpressing Cells through Phosphorylation | **Chongfeng Gao, Takuma Nakajima, Yoichi Taya, and Nobuo Tsuchida** | **860** |
| Transcriptional Regulation of the Cyclooxygenase-2 Gene by Diverse Ligands in Murine Osteoblasts | **David J. Wadleigh and Harvey R. Herschman** | **865** |
| The Leukemia-Associated Gene TEL Encodes a Transcription Repressor Which Associates with SMRT and mSin3A | **Subhra R. Chakrabarti and Giuseppina Nucifora** | **871** |
| Less Repair of Pyrimidine Dimers and Single-Strand Breaks in Genes by Scid Cells | **Rudaina H. Alrefai, E. Jeffrey Beecham, Vilhelm A. Bohr, and Patricia J. Gearhart** | **878** |
| Mass Spectrometric Characterization of *Limulus polyphemus* Hemocyanin | **Jacques Maddaluno and Kym F. Faull** | **883** |
| Comparative Gene Expression Profiling in Response to p53 in a Human Lung Cancer Cell Line | **Suisui Song, Timothy K. MacLachlan, Raymond D. Meng, and Wafik S. El-Deiry** | **891** |
| Phosphorylation of Bcl-2 and Mitochondrial Changes Are Associated with Apoptosis of Lymphoblastoid Cells Induced by Normal Immunoglobulin G | **Sooryanarayana, Nagendra Prasad, Emmanuelle Bonnin, Anastas Pashov, Kamal Ben Jilani, Jean-Claude Ameisen, Michel D. Kazatchkine, and Srini V. Kaveri** | **896** |
| Structural Requirements for Tyr in the Consensus Sequence Y-E-N of a Novel Nonphosphorylated Inhibitor to the Grb2-SH2 Domain | **Ya-Qiu Long, Zhu-Jun Yao, Johannes H. Voigt, Feng-Di T. Lung, Juliet H. Luo, Terrence R. Burke, Jr., C. Richter King, Dajun Yang, and Peter P. Roller** | **902** |
| GFP–Human High-Affinity Carnitine Transporter OCTN2 Protein: Subcellular Localization and Functional Restoration of Carnitine Uptake in Mutant Cell Lines with the Carnitine Transporter Defect | **Anne-Marie Lamhonwah and Ingrid Tein** | **909** |
| Manumycin A, Inhibitor of ras Farnesyltransferase, Inhibits Proliferation and Migration of Rat Vascular Smooth Muscle Cells | **Hirosuke Kouchi, Kazufumi Nakamura, Kazuo Fushimi, Masakiyo Sakaguchi, Masahiro Miyazaki, Tohru Ohe, and Masayoshi Namba** | **915** |

| | | |
|---|---|---|
| Genetic Selection of Phage Engineered for Receptor-Mediated Gene Transfer to Mammalian Cells | **Paul D. Kassner, Michael A. Burg, Andrew Baird, and David Larocca** | **921** |
| Voltage-Dependent Large Conductance Channels in Visceral Smooth Muscle | **Fivos Vogalis** | **929** |
| Induction of Mouse $Ca^{2+}$-Sensitive Chloride Channel 2 Gene during Involution of Mammary Gland | **Daeyeon Lee, Seckho Ha, Yoonjung Kho, Jaeyoung Kim, Kwangkeun Cho, Myunggi Baik, and Yunjaie Choi** | **933** |
| Construction of Epstein–Barr Virus-Based Expression Vector Containing Mini-OriP | **Junko Tanaka, Yoshihiro Miwa, Keiko Miyoshi, Akemichi Ueno, and Hideo Inoue** | **938** |
| Site-Specific Mutagenesis of Mistletoe Lectin: The Role of RIP Activity in Apoptosis | **Martin Langer, Babette Möckel, Jürgen Eck, Holger Zinke, and Hans Lentzen** | **944** |
| A Highly Mobile C-Terminal Tail of the *Escherichia coli* Protein Export Chaperone SecB | **Thomas L. Volkert, James D. Baleja, and Carol A. Kumamoto** | **949** |
| Molecular Cloning and Characterization of Human *Frizzled-4* on Chromosome 11q14-q21 | **Hiroyuki Kirikoshi, Norihiko Sagara, Jun Koike, Katsuaki Tanaka, Hisahiko Sekihara, Momoki Hirai, and Masaru Katoh** | **955** |
| Reduced mRNA Expression of the DNA Demethylase, MBD2, in Human Colorectal and Stomach Cancers | **Yae Kanai, Saori Ushijima, Yukihiro Nakanishi, and Setsuo Hirohashi** | **962** |
| Cytosolic $Ca^{2+}$ Controls the Loading Dependence of $IP_3$-Induced $Ca^{2+}$ Release | **Ludwig Missiaen, Humbert De Smedt, Jan B. Parys, Kristel Van Acker, Patrick De Smet, and Geert Callewaert** | **967** |
| Structural Dependence of the Cellular Isoform of Prion Protein on Solvent: Spectroscopic Characterization of an Intermediate Conformation | **Paola Pergami, Emilia Bramanti, and Giorgio A. Ascoli** | **972** |
| The Effects of 2-Aminoethoxydiphenyl Borate, a Novel Inositol 1,4,5-Trisphosphate Receptor Modulator on Myometrial Contractions | **Jessica Ascher-Landsberg, Trevania Saunders, Michal Elovitz, and Mark Phillippe** | **979** |
| Identification of a DNA Binding Protein Cooperating with Estrogen Receptor as RIZ (Retinoblastoma Interacting Zinc Finger Protein) | **Nicola Medici, Ciro Abbondanza, Vincenzo Nigro, Valentina Rossi, Giulio Piluso, Angela Belsito, Luigi Gallo, Annarita Roscigno, Paola Bontempo, Annibale A. Puca, Anna Maria Molinari, Bruno Moncharmont, and Giovanni A. Puca** | **983** |
| Cloning and Functional Characterization of the Promoter Region of the Gene Encoding Human Adenylate Kinase Isozyme 3 | **Takafumi Noma, Naoto Adachi, and Atsushi Nakazawa** | **990** |
| Identification of Two Distinct Transcripts for the Neuronal Apoptosis Inhibitory Protein Gene | **Kenji Yamamoto, Harumi Sakai, Shinji Hadano, Yoichi Gondo, and Joh-E Ikeda** | **998** |

**ERRATA**

Volume **258,** Number 1 (1999), in Article ID bbrc.1999.0573, "Functional Expression of Components of the Natriuretic Peptide System in Human Ocular Nonpigmented Ciliary Epithelial Cells," by Javier Ortego and Miguel CocaPrados, pages 21–28 **1007**

Volume **262,** Number 3 (1999), in Article ID bbrc.1999.1275, "Novel Inhibitors of Advanced Glycation Endproducts," by Samuel Rahbar, Kiran Kumar Yernini, Stephen Scott, Noe Gonzales, and Iraj Lalezari, pages 651–656 **1008**

Author Index for Volume 264 **1009**

NOTICE

The Subject Index for Volume 264 will appear as part of a cumulative index for the year 1999.